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HOW MAY MANUAL TRAINING BE MADE EDUCATIVE?

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Some years ago (not so long as many think) there arose a cry against the public-school course of study in this country, on the ground that it was too theoretical. By this was possibly meant that too much time was given to the theory as to how things were to be done, and too little time to really doing them. In a confused sort of way, also, it was felt that neither the subjects nor the teaching fitted into life, and that the pupil knew about as little about real life, and how to live, after as before attending school. These charges were just and true. In response to this outcry, manual training was introduced to bring us the practical side of the curriculum. It gave its attention, for this reason, to the practical side to the exclusion of the theoretical. "Learn to do by doing," was its war-cry. But its advocates did not see that we must have something in mind to do before we begin the doing. So bent were they upon doing that they seemed to think it necessary to discard all theory, simply because it belonged to the other side in the conflict which they were called to oppose. Their opponents, however, made quite as serious a mistake in supposing that pure theory is worth teaching within itself. A theory is good only because it will work, and the only earthly use for it is that it may show blind mortals how to do things. The manual-trainingist went just as far in the opposite direction, and forgot that we cannot really learn to do by mere doing, any more than we can learn to think by mere thinking. Kant taught the world long ago that, although our knowledge begins with experience, it does not follow that it all comes from experience. It could not but logically follow from this extreme view of practical teaching that hand-work should become mere industrial training, aiming at the finished product and the dextrous mechanic. This trade notion we have discussed in the paper preceding this one. What we are concerned with here is the great chasm which this conflict created between theory and practice. So far has it grown that the school-teacher feels

them to be two distinct methods of teaching, and that it is a crime to hold to one and tolerate the other. Above all things that the American teacher needs to learn today is that theory and practice must be brought together in every recitation. Our ideas are entirely too vague on this subject.

The first question to settle, then, is: "When is hand-work truly practical?" Certainly not when there is no thought in it. Constructing products at random, with no purpose or theory, is above all things highly impractical. To keep a child doing something just because we believe in doing is senseless. Hand-work is practical when the teacher and the pupil are fully in possession of a clearly conceived theory which they are endeavoring to apply in the hand-work, and it is not practical otherwise. This is true in other studies as well as in hand-work. No teacher in mathematics would allow his pupil to continue work at the blackboard, if he should discover that there is no definite theory clearly outlined in his mind which he is attempting to apply. The chemist in the laboratory would not think of allowing the student to continue indefinite experimenting, unless he knew that he was the master of the thought-processes involved, and was keenly conscious of them at the time of the experiment. If it is true in other studies, it ought to be true in manual training also. We have just made a plea for the union of theory and practice in *all* studies; hand-work is the best example of those studies which are highly capable of this union. There is perhaps no study so adapted, which lends itself so rapidly to this idea, as hand-work. It ought to do a revolutionizing work for other studies in showing how successfully theory and practice can be combined. We must not allow this divorce to continue, and it certainly seems to be the mission of manual training to lead the way in teaching the facility of a complete interworking of good theory and good practice as closely together as possible. So, in making the plea that manual training realize this union as it has not done, I am pleading for all subjects in the curriculum and not for manual training alone.

The theories or thoughts about any kind of hand-work are of two classes of facts: first, the technical facts, which we have so far discussed; second, the social facts. The technical facts have not been wholly neglected, but have never been the prominent and conscious elements

which they must be in the future, to make hand-work truly educative. The social aspect has been almost wholly neglected.

I can only intimate in the briefest way what is meant by socializing hand-work. There are immense fields of thought back of even the materials used in hand-work. Vast industries and millions of men are at work producing them. Even the finished product, if it is worthy of teaching, engages thousands of persons in the world. Shall we pass over all this as worthless? Shall we subordinate it to a mere tool? Is it relatively of such minor importance that the child should learn to sympathize with the great industries and classes of people engaged in the world's work? We think not. We believe that the child should as much know society as he should know how to make some things which society needs. The informing of his intellect, as well as the demand that he sympathize with and understand the world in which he must live, demands this. All subjects taught must lead the child into life, must show him something of the composition of the world in which he is to live, something of its demands upon him, in order that he may find his place in the world. Herein is the vast difference between industrial training and educative hand-work. As we have said, the chief idea in the former is the finished product; the chief idea in the latter is the growth of the learner. Our plea is that this latter purpose dominate the mind of the teacher. We are not wishing the other neglected, but manual-trainingists have almost forgotten that they are teaching children and not subjects.

The development of the powers of the child must not be sacrificed to the development of a finished product. The public will sooner or later banish any study from the curriculum of the elementary grades which does this. Manual training is too vital to education to allow it to be murdered by its own friends. No educator can impartially study the situation and admit that we can spare it from the course of study. But we shall be forced to spare it, if we do not place it upon an educative basis, if we do not develop the child's reason and sympathy by it, rather than neglect the child for one weaker phase of it. For it certainly *is* the weaker element in hand-work that we are now getting. The dogmatism and lack of reason referred to in the trade-school notion of the subject, which has dominated the teaching of it, is not so valu-

able as the teaching of its facts by a development of reason in the subject. The negress who learned to cook by slavishly following the instruction of the mistress, if taken out of the kitchen for a few years, almost entirely forgot the art. The pupil taught without being led to reason out the detailed steps one by one likewise loses the entire subject. This developing of reason is again one of the answers to our question: "How is manual training to be made educative?" To do this, large principles must be taken, under which to subsume numerous facts, which have been formerly left as a group of unrelated data. If one large principle is carefully worked out by the teacher, and kept clearly before the minds of the students, then the causal relation of the different steps will easily and logically follow.

We have thus tried to show that hand-work may be differentiated from trade-work and become properly educative, by (1) stressing the combination of theory and practice more; (2) by such teaching as will prove to the pupils' minds that the work is not mere doing, but that it is the application of thought, that thought is its predominant feature; (3) by showing its immense importance as relating to the life of the world; (4) by settling upon large principles instead of disconnected facts; and (5) by developing the causal relations, and thus training the judgment and reasoning faculty of the child; in a word, by changing our present point of view from the product to the child.